



September 17, 2015

Scott Mathias  
Associate Director  
Air Quality Policy Division  
U.S. Environmental Protection Agency  
Research Triangle Park, NC 27711

Re: Air Dispersion Modeling of Missouri Sulfur Dioxide Pollution

Dear Associate Director Mathias:

Sierra Club urges the U.S. Environmental Protection Agency to designate the areas surrounding the Labadie and Sibley coal-fired power plants as nonattainment under the sulfur dioxide (“SO<sub>2</sub>”) National Ambient Air Quality Standard (“NAAQS”). Air dispersion modeling recently conducted by Wingra Engineering, S.C. on behalf of Sierra Club demonstrates that ambient air concentrations in both areas exceed the NAAQS, which is the maximum concentration of air pollution allowed to protect public health.

First, air dispersion modeling demonstrates that SO<sub>2</sub> emissions from the Labadie coal-fired power plant in Missouri have caused downwind SO<sub>2</sub> ambient air concentrations to exceed the 196.2 micrograms per cubic meter NAAQS. In particular, the modeling shows peak concentrations as high as 235.7 micrograms per cubic meter. This is consistent with the Missouri Department of Natural Resources modeling results, which found emissions from this facility exceeded the NAAQS. Accordingly, the U.S. Environmental Protection Agency should designate the area surrounding the Labadie coal-fired power plant as nonattainment under the NAAQS.

Even though Missouri Department of Natural Resources’ modeling found emissions from the Labadie plant exceeded the NAAQS, it presented another option to nonattainment demonstration—unclassifiable. The agency suggested this option because three months of data from a monitor recently installed by Ameren do not show violations of the NAAQS. U.S. EPA should not consider this a viable option because the monitor is not located at the

area of peak concentration and because three years of quality-assured monitoring data are required in order to determine whether an area complies with the 1-hour SO<sub>2</sub> NAAQS. In addition, Ameren presented modeling to the Missouri Department of Natural Resources which purportedly showed no violations of the NAAQS. U.S. EPA should not rely on Ameren's modeling as it was able to "engineer" these results because it modified three important inputs. Sierra Club submitted comments to the agency, with copies to EPA Region 7, about why an unclassifiable designation was inappropriate and about why Ameren's modeling was deficient. See attached comment letters, which include copies of its modeling for the agency's consideration. Sierra Club intends to supplement its comments with a further critique of Ameren's Labadie modeling as there was not enough time to comprehensively review the modeling before the comment deadline. Sierra Club will copy EPA Region 7 and EPA's Office of Air Quality Planning and Standards on this comment supplement.

Second, air dispersion modeling demonstrates that SO<sub>2</sub> emissions from the Sibley coal-fired power plant in Missouri, along with other large sources of SO<sub>2</sub> that are located within 50 kilometers of the plant, have caused downwind SO<sub>2</sub> ambient air concentrations to exceed the NAAQS. In particular, the modeling shows peak concentrations as high as 435.2 micrograms per cubic meter. The modeling results are consistent with the only monitor located in the modeled SO<sub>2</sub> plume. The 2012-14 design value measured at monitor #7290950034 was 150 ppb or 392.4 micrograms per cubic meter. Based on actual hourly emissions from the Sibley plant and other regional sources, the modeling analysis predicted a concentration near the monitor location of 382.5 micrograms per cubic meter. Since the predicted and actual measured design values are in close agreement, this comparison supports the accuracy of Sierra Club's modeling results. Therefore, the U.S. Environmental Protection Agency should also designate the area surrounding the Sibley coal-fired power plant as nonattainment under the NAAQS.

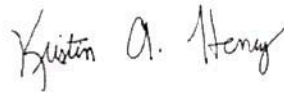
Enclosed, please find the results of the modeling analyses, along with the corresponding modeling input and output files and comments Sierra Club submitted to Missouri Department of Natural Resources.

Sierra Club urges the U.S. Environmental Protection Agency to consider this information as it undertakes area designations in Missouri for the 2010 revised primary SO<sub>2</sub> NAAQS. This information has already been provided to Missouri Department of Natural Resources and is also being provided to EPA Region 7. In the meantime, please let us know if we can provide any additional information.

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Thank you for your attention to and consideration of this matter, and please do not hesitate to contact us if you would like to discuss further.

Sincerely,

A handwritten signature in black ink that reads "Kristin A. Henry". The signature is written in a cursive, flowing style.

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